SCALABLE AND PERCEPTUALLY RANKED SIGNAL CODING AND DECODING

Abstract of the Disclosure

A method and system for encoding and decoding an input signal in relation to the most perceptually relevant aspects of the input signal. A two-dimensional (2D) transform is applied to the input signal to produce a magnitude matrix and a phase matrix that can be inverse quantized by a decoder. A first column of coefficients of the magnitude matrix represents a mean spectral density (MSD) function of the input signal. Relevant aspects of the MSD function are encoded at a beginning of a data packet. The MSD function is also processed through a core perception model to determine bit allocation. The matrices are then quantized and priority ordered into a data packet, with the least perceptually relevant information at the end of the packet so that it may be ignored or truncated for scalability to the channel data rate capacity.